

Claims

1. A method including

receiving a user request for an object at a server;

performing an operation on data associated with said object at a cluster de-

vice, said operation including accessing said object at said server; and

conditionally allowing access to said object in response to said user request

and a result of said operation.

2. A method as in claim 1, including conditioning said operation on a

feature of said object, said feature including at least one of: a file name, a file type, a file-

system share.

3. A method as in claim 1, including conditioning said operation on an

intersection of

a feature of said object, said feature including at least one of: a file name, a

file type, a filesystem share; and

a type of access associated with said user request;

wherein said operation is performed for an intersection of at least one said

feature and at least one type of access.

1 4. A method as in claim 1, including persistently recording a result of
2 said operation in association with said object.

3
4 5. A method as in claim 1, including selecting said cluster device to
5 perform said operation in response to a priority class associated with said cluster device.

6
7 6. A method as in claim 1, wherein said operation includes a plurality
8 of processes, each one process being performed at a separate cluster device.

9
10 7. A method as in claim 1, wherein said operation includes at least one
11 of: virus scanning, encryption or decryption, compression or decompression.

12
13 8. A method as in claim 1, wherein said operation includes
14 setting a timeout at said server;
15 resetting said timeout in response to receiving a response from said cluster
16 device to a protocol message asking if said cluster device is still working on said opera-
17 tion; and
18 determining that said operation is successful in response to receiving a re-
19 sponse from said cluster device before said timeout expires.

1 9. A method as in claim 1, including assigning an access type to said
2 cluster device, said access type allowing said cluster device to perform said operation
3 notwithstanding user locks associated with said object.

4
5 10. A method as in claim 9, including restricting said access type in re-
6 sponse to at least one of: a selected set of network addresses for said cluster device, a se-
7 lected set of domain names for said cluster device, a selected set of user names at said
8 cluster device, a selected set of interfaces between said server and said cluster device.

9
10 11. A method as in claim 1, including
11 at a first time, recording a result of said operation for said object; and
12 at a second time, conditioning said operation on said result.

13
14 12. A method as in claim 11, wherein said result includes at least one of:
15 a time when said operation was performed, remedial measures taken in response to said
16 operation, whether access was allowed in response to said operation.

17
18 13. A method as in claim 1, including conditioning said operation on a
19 type of access associated with said user request.

20
21 14. A method as in claim 13, wherein said operation is performed before
22 allowing access to said object for requests including read access.

1
2 15. A method as in claim 13, wherein said operation is performed after
3 allowing access to said object for requests including write access.
4

5 16. Apparatus including
6 a server having a set of objects and a network interface;
7 a user request for at least one requested one of said objects;
8 a cluster device;
9 a first message from said server to said cluster device, said first message
10 indicating said requested one object;
11 a second message from said cluster device to said server, said second mes-
12 sage indicating a result of an operation performed on said requested one object; and
13 a response to said user request, said response including conditional access
14 to said object in response to said second message.
15

16 17. Apparatus as in claim 16, wherein said first message is responsive to
17 a feature of said object, said feature including at least one of: a file name, a file type, a
18 filesystem share.
19

20 18. A method as in claim 16, wherein said first message is responsive to
21 an intersection of

1 a feature of said object, said feature including at least one of: a file name, a
2 file type, a filesystem share; and
3 a type of access associated with said user request.
4

5 19. Apparatus as in claim 16, wherein said first message is directed at a
6 selected said cluster device in response to a priority class associated with said cluster de-
7 vice.
8

9 20. Apparatus as in claim 16, including a plurality of said first messages
10 directed at separate said cluster devices in response to a single said user request.
11

12 21. Apparatus as in claim 16, wherein said second message includes a
13 result of at least one of: virus scanning, encryption or decryption, compression or decom-
14 pression.
15

16 22. Apparatus as in claim 16, including a persistent record of at least
17 some information responsive to said second message, said persistent record being associ-
18 ated with said object.
19

20 23. Apparatus as in claim 22, wherein said persistent record includes at
21 least one of: a time when said second message was received, remedial measures taken by

1 said cluster device in response to said first message, whether access was allowed in re-
2 sponse to said user request.

3
4 24. Apparatus as in claim 16, wherein said conditional access is respon-
5 sive to a type of access associated with said user request.

6
7 25. Apparatus as in claim 24, wherein said second message is received
8 before allowing access to said object for user requests including read access.

9
10 26. Apparatus as in claim 24, wherein said first message is sent after al-
11 lowing access to said object for user requests including write access.

12
13 27. Memory or mass storage including instructions interpretable by a
14 computing device, said instructions directing said computing device to
15 receive a user request for an object at a server;
16 perform an operation on data associated with said object at a cluster device,
17 said operation including accessing said object at said server; and
18 conditionally allow access to said object in response to said user request and
19 a result of said operation.

1 28. Memory or mass storage as in claim 27, including instructions di-
2 recting said computing device to condition said operation on a feature of said object, said
3 feature including at least one of: a file name, a file type, a filesystem share.

4
5 29. Memory or mass storage as in claim 27, including instructions di-
6 recting said computing device to condition said operation on an intersection of

7 a feature of said object, said feature including at least one of: a file name, a
8 file type, a filesystem share; and

9 a type of access associated with said user request;

10 wherein said operation is performed for an intersection of at least one said
11 feature and at least one type of access.

12
13 30. Memory or mass storage as in claim 27, including instructions di-
14 recting said computing device to persistently record a result of said operation in associa-
15 tion with said object.

16
17 31. Memory or mass storage as in claim 27, including instructions di-
18 recting said computing device to select said cluster device to perform said operation in
19 response to a priority class associated with said cluster device.

1 32. Memory or mass storage as in claim 27, wherein said operation in-
2 cludes a plurality of processes, each one process being performed at a separate cluster de-
3 vice.

4
5 33. Memory or mass storage as in claim 27, wherein said operation in-
6 cludes at least one of: virus scanning, encryption or decryption, compression or decom-
7 pression.

8
9 34. Memory or mass storage as in claim 27, wherein said operation in-
10 cludes

11 setting a timeout at said server;

12 resetting said timeout in response to receiving a response from said cluster
13 device to a protocol message asking if said cluster device is still working on said opera-
14 tion; and

15 determining that said operation is successful in response to receiving a re-
16 sponse from said cluster device before said timeout expires.

17
18 35. Memory or mass storage as in claim 27, including instructions di-
19 recting said computing device to assign ing an access type to said cluster device, said ac-
20 cess type allowing said cluster device to perform said operation notwithstanding user
21 locks associated with said object.

1 36. Memory or mass storage as in claim 35, including instructions di-
2 recting said computing device to restrict said access type in response to at least one of: a
3 selected set of network addresses for said cluster device, a selected set of domain names
4 for said cluster device, a selected set of user names at said cluster device, a selected set of
5 interfaces between said server and said cluster device.

6
7 37. Memory or mass storage as in claim 27, including instructions di-
8 recting said computing device to

9 at a first time, record a result of said operation for said object; and
10 at a second time, condition said operation on said result.

11
12 38. Memory or mass storage as in claim 37, wherein said result includes
13 at least one of: a time when said operation was performed, remedial measures taken in
14 response to said operation, whether access was allowed in response to said operation.

15
16 39. Memory or mass storage as in claim 27, including instructions di-
17 recting said computing device to condition said operation on a type of access associated
18 with said user request.

19
20 40. Memory or mass storage as in claim 39, wherein said operation is
21 performed before allowing access to said object for requests including read access.

- 1 41. Memory or mass storage as in claim 39, wherein said operation is
- 2 performed after allowing access to said object for requests including write access.